

## RESEARCH COMMUNICATION

# Influencing Women's Actions on Cervical Cancer Screening and Treatment in Karawang District, Indonesia

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### Abstract

**Introduction:** The impact of cervical cancer prevention programs depends on persuading women to go for screening and, if needed, treatment. As part of an evaluation of a pilot project in Indonesia, qualitative research was conducted to explore the factors that influence women's decisions regarding screening and treatment and to generate practical recommendations to increase service coverage and reduce loss to follow up. **Methods:** Research was conducted at 7 of the 17 public health centers in Karawang District that implemented the pilot project. Interviews and focus group discussions were held with 20 women, 20 husbands, 10 doctors, 18 midwives, 3 district health officials, and 16 advocacy team members. **Results:** Free services and mobile outreach events encouraged women to go for screening, along with promotional efforts by community health workers, advocacy teams, and the mass media. Knowledge and perceptions were the most important barriers to screening: women were not aware of cervical cancer risks, did not know the disease was treatable, and were fatalistic. Factors facilitating treatment were social support from husbands, relatives, and friends and the encouragement and role modeling of health workers. Barriers to prompt treatment included limited access to services and the requirement for husband's consent for cryotherapy. **Conclusion:** As cervical cancer prevention services are scaled up throughout Indonesia, the findings suggest three strategies to expand screening coverage and ensure prompt treatment: strengthening community mobilization and advocacy activities, modifying the service delivery model to encourage a single visit approach to screening and treatment, and working to gain men's support.

**Key words:** Cancer screening - cervical cancer - cancer prevention - Indonesia

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### Introduction

Despite a steady decline in the incidence of cervical cancer in Indonesia since 1980 (Forouzanfar et al., 2011), cervical cancer remains the third most common cancer, with an incidence of 12.6 cases per 100,000 women and a mortality rate of 7 deaths per 100,000 women (Ferlay et al., 2008). In 2008 there were over 13,700 new cases of cervical cancer in Indonesia and almost 7,500 deaths due to this disease. Helping Indonesian women access cervical cancer screening, coupled with more efficient treatment services, could reduce deaths from this disease, which is preventable when detected and treated during precancerous stages.

To this end, the Cervical and Breast Cancer Prevention (CECAP) Project developed and tested a national service delivery model for cervical cancer screening and treatment in Indonesia. Instead of Pap

smears, which are too costly for the average woman in Indonesia and available on a very limited basis, the CECAP Project relied on visual inspection with dilute acetic acid (VIA) to screen women. The VIA procedure applies a dilute acetic acid solution (3–5%) to the cervix; this causes a discoloration of precancerous lesions, which are visible and easily identified by a trained provider. Because VIA requires less infrastructure, training, equipment, and specialized personnel than other cervical cancer screening methods, it is well suited to low resource settings. A series of studies has demonstrated its effectiveness (Megevand et al., 1996; Belinson et al., 1999; University of Zimbabwe and Jhpiego, 1999; Mandelblatt et al., 2002; Goldie et al., 2005; Sankaranarayanan et al., 2005; 2007; Almonte et al., 2007), and over 40 low-income countries have introduced VIA on either a national or pilot-study basis (CCA, 2012).

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Screening is only effective when followed by timely and effective treatment. The CECAP service delivery model relies on cryotherapy to treat precancerous lesions. This inexpensive and technically simple technique destroys abnormal tissue by freezing it with a probe cooled by liquid carbon dioxide (CO<sub>2</sub>). A systematic review of 32 studies found that the procedure is safe and has an overall cure rate of almost 90% (Castro et al., 2003), and more recent studies have confirmed its effectiveness (Sankaranarayanan et al., 2007; Luciani et al., 2008; Chamot et al., 2010).

One of the greatest advantages of VIA screening is that results are available immediately, so women can be offered cryotherapy during the same visit. Studies show that, regardless of the screening and treatment methods employed, reducing the number of visits decreases loss to follow-up (Goldhaber et al., 2005; Luciani and Winkler, 2006; Nene et al. 2007; Perkins et al., 2010). Hence, a single visit approach (SVA) to screening and treatment can minimize the number of women with suspected cervical dysplasia who go untreated. SVA has been proven safe, feasible, cost-effective, and acceptable to women in many countries, including Ghana, Guatemala, India, Laos, South Africa, and Thailand (Gaffikin et al., 2003; Denny et al., 2005; Goldie et al., 2005; Mathers et al., 2005; Blumenthal et al., 2007; Phongsavan et al., 2011). Indeed, anxious VIA-positive women express relief at being treated as soon as possible (Bradley et al., 2006).

The CECAP service delivery model was piloted in the district of Karawang, which is located approximately 1.5 hours east of Jakarta, from January 2007 to December 2011. Some project activities, such as training providers and supplying new equipment, focused on strengthening service delivery at the public health centers (puskesmas) located in most sub-districts. Other activities, such as establishing community advocacy teams and training volunteer community health workers (kaders), were designed to raise awareness of cervical cancer prevention, gain broad support from stakeholders and the community for CECAP services, and increase demand for VIA screening. This is critical because women in developing countries frequently do not take advantage of cervical cancer screening and treatment services, making it difficult to reach enough women to reduce mortality (Obi et al., 2007; Othman et al., 2009).

Women in the target group for cervical cancer screening (age 30-50 years) are harder to reach than younger women because they do not visit health facilities as frequently for family planning and maternal and child health services (Agurto et al., 2005). Therefore, health centers in Karawang District, each of which serves 8 to 15 villages, began conducting mobile outreach events dedicated to VIA screening. Mobile teams visited each village once or twice a year and conducted screening at the village midwife's house. By the end of the project, most women were screened at these events, which were publicized by kaders. Cryotherapy was not offered

at mobile outreach events, so women found to have precancerous lesions were referred to the health center for treatment. Those suspected of having cancer were referred to the hospital for advanced treatment.

Key indicators for cervical cancer prevention projects include the screening coverage rate, the cryotherapy rate, and the SVA rate. Over the course of the five-year CECAP Project, a total of 45,050 women received VIA screening, including 30,138 women in the target age group of 30 to 50 years. They represent 24.4% of the total female population age 30 to 50 years living in the project's catchment area. Most women (83.1%) who screened positive in Karawang sought cryotherapy; some received it the same day as screening, while others visited a health center for treatment at a later date. During the last 18 months of the project, only 13% of women who sought cryotherapy were treated the same day that they were screened (Kim et al., 2011).

While these results are important, further efforts are needed to increase VIA screening coverage, fully implement SVA, and reduce loss to follow-up as the CECAP model is scaled up nationwide. Qualitative research conducted as part of the CECAP Project evaluation sheds light on factors that shape women's decisions to seek cervical cancer screening and, if needed, to get cryotherapy. The study reported here explores the perspectives of multiple stakeholders-including women and their husbands, service providers, community advocacy teams, and project managers-in order to generate practical recommendations for increasing service coverage and reducing loss to treatment follow-up in this setting. The objectives of the study were (1) to determine what factors motivate women to seek VIA screening and, if needed, treatment with cryotherapy and (2) to identify the barriers to screening and prompt treatment.

## Materials and Methods

The CECAP Project was implemented at 17 public health centers located in both urban and rural areas of Karawang District. Seven of these health centers and the surrounding communities participated in the three qualitative research activities described below.

### *Interviews with providers and clients at high-performing facilities*

In December 2010, interviews were conducted at four high-performing health centers, which were defined by the relatively large proportion of VIA-positive women who received cryotherapy. The goal was to identify specific factors that enabled these health centers to reach more women with treatment compared with other health centers.

All doctors and midwives who had received CECAP training and were assigned to provide VIA screening and/or cryotherapy were invited to participate. Each health center has one doctor, typically a general practitioner, and

**Table 1. Number of Health Centers and Respondents Participating in Qualitative Research**

Date	Health centers*	Clients and family members		Providers		Advocacy team members	DHO officials
		Women	Men	Doctors	Midwives		
Dec. 2010	4	20	20	4	8	0	0
Sep. - Oct. 2011	6	0	0	6	10	16	3

\*Three health centers participated in both rounds of data collection

three or four nurse-midwives on staff. Nurse-midwives usually perform VIA screening, while doctors have been responsible for conducting cryotherapy. Four doctors and eight midwives were interviewed regarding the reasons why VIA-positive women pursued cryotherapy, factors that facilitate treatment after screening, and barriers to treatment (Table 1). All of the doctors and midwives were female.

We reviewed clinic records to identify 20 women (5 per health center) aged 25-50 years who received cryotherapy within one week of VIA screening. These women can be considered positive deviants, given that most women waited more than one week before getting treatment, if they returned for treatment at all (Kim et al., 2011). All of these women-like the vast majority of women screened in Karawang-were married. Interviews were also conducted with 20 men (5 per health center) whose wives received cryotherapy. Interviews explored the reasons why some women pursued cryotherapy quickly, why other women delayed, and the husband's role in the decision-making process.

#### *Interviews with providers regarding service delivery*

In September-October 2011, individual interviews were conducted with providers at six health centers, including three of the high-performing health centers that participated in the 2010 qualitative research. The goal was to examine the impact of two interventions tested by the CECAP Project: (1) a quality improvement process called Standards-Based Management and Recognition (SBM-R) (Necochea and Bossemeyer, 2005) that was launched in 2009 and (2) cryotherapy training for midwives conducted in May 2011. Three of these six health centers had implemented both interventions, one had implemented only SBM-R®, and two had not implemented either intervention.

Once again, all providers with CECAP training and responsibilities for VIA screening and/or cryotherapy were invited to participate. A total of 16 providers (6 doctors and 10 midwives) were interviewed about the quality of cervical cancer screening and treatment services at their facility and, if relevant, their experiences with the quality improvement and cryotherapy training interventions. All of the providers were women.

#### *Interviews and focus groups with advocacy teams and officials*

In September-October 2011, individual interviews were conducted with three officials at the District Health Office (DHO) and two members of the district advocacy

team, all of whom were involved in overseeing the CECAP Project. In addition, focus group discussions (FGDs) were held with 14 members of three community (or sub-district) advocacy teams, which were selected to represent rural, urban, and industrial areas with differing levels of resources. These teams were responsible for designing and implementing advocacy activities at the local level to raise awareness of cervical cancer and encourage women to go for VIA screening. The goal of this research was to understand the implementation, impact, and potential sustainability of the CECAP Project, especially advocacy and promotional efforts.

#### *Data collection and analysis*

All interviews and FGDs were conducted in Bahasa Indonesia, which all but one research participant spoke fluently. No translations were necessary for data analysis, since researchers were native speakers. All interviews and FGDs were audiotaped. After each day of data collection, the interviewer/facilitator and note taker discussed key findings in a debriefing session; edited, cleaned, and summarized the data; and determined whether there were other topics they needed to pursue.

For the data analysis, qualitative data were explored using content analysis (Riley, 1990). Researchers reviewed the notes taken during the interviews and listened to recordings to identify key findings. Typical quotes were selected to illustrate these findings and translated for this report.

The evaluation was approved by the Johns Hopkins Bloomberg School of Public Health (JHSPH) Institutional Review Board (IRB) and the Ministry of Health in Indonesia. The study team obtained informed consent from all persons who participated in the interviews and FGDs.

## **Results**

This section synthesizes the results from all of the various research activities and respondents, in order to present a unified picture of the factors that facilitate or impede women from accessing VIA screening and, if needed, going for treatment. Table 2 lists key findings.

#### *Factors encouraging VIA screening*

Two basic changes to the service delivery model expanded screening coverage. First, the district government of Karawang enacted a regulation making basic health services free in 2006; as a result, people became more likely to seek all kinds of health care,

**Table 2. Factors that Facilitate or Discourage Indonesian Women from Going for VIA Screening and Cryotherapy**

Service	Facilitating factors	Barriers
VIA screening	Service delivery: <ul style="list-style-type: none"> <li>· Free services</li> <li>· Convenience of mobile outreach events</li> </ul> Women's perspectives: <ul style="list-style-type: none"> <li>· Social support</li> <li>· Curiosity</li> </ul> Promotion: <ul style="list-style-type: none"> <li>· Kaders' promotional efforts</li> <li>· Efforts of community advocacy teams</li> <li>· Television advertising</li> </ul>	Women's perspectives: <ul style="list-style-type: none"> <li>· Lack of knowledge</li> <li>· Low risk perceptions of cervical cancer</li> <li>· Lack of symptoms</li> <li>· Fear and fatalism</li> </ul> Promotion: <ul style="list-style-type: none"> <li>· Limited community mobilization and advocacy</li> </ul>
Cryotherapy	Women's perspectives: <ul style="list-style-type: none"> <li>· Desire for cure</li> <li>· Husband's support</li> <li>· Support from friends and relatives</li> </ul> Promotion: <ul style="list-style-type: none"> <li>· Positive role models</li> <li>· Encouragement of kaders and providers</li> </ul>	Service delivery: <ul style="list-style-type: none"> <li>· Additional trip to health center required</li> <li>· Limited days and hours</li> <li>· Provider not always available</li> <li>· Broken equipment and lack of supplies</li> <li>· Husband's presence/consent required</li> </ul> Women's perspectives: <ul style="list-style-type: none"> <li>· Lack of information and communication skills to explain to husband</li> <li>· Fear and modesty</li> </ul>

including VIA screening. Second, health centers began organizing mobile outreach events to make screening more accessible, since most women live in villages far from a health center. A midwife in Klari explained the challenge of getting women to travel to a health center for screening: *There's no public transportation here, like a bus ... so they have to take ojek [motorbike taxi]; it's 10-15 thousand [rupiah] (about US\$1.00-\$1.50) one way. Too expensive for them, so when they don't feel sick, why should they come to health center?*

Mobile outreach has proven effective at overcoming multiple barriers to screening: it eliminates transportation costs, reduces time away from household chores, and minimizes the need for child care. It also raises awareness of cervical cancer. A woman in Kotabaru explained that after some of her neighbors registered for the event, *"I got curious. I wanted to know, I got motivated to know the disease."* The events also helped women find social support for screening, as they attended with friends and neighbors. A woman in Pedes admitted, *"Well, I wouldn't go if I had to go by myself."*

Advocacy and promotional efforts by the CECAP Project also encouraged women to go for screening. Kaders were especially influential according to the women interviewed; these volunteer health promoters serve as community educators and are powerful role models. While most kaders invited women to mobile outreach events, committed and enthusiastic kaders did far more: they raised awareness of cervical cancer and promoted VIA screening during their day-to-day interactions with villagers, urged women to attend the outreach events, reminded them on the day of the event, and sometimes even arranged transportation.

Providers and advocacy team members noted that a 2009 training workshop for kaders improved their ability to speak publicly about the need for cervical cancer screening and treatment. Providers at high-performing health centers recognized the importance of the kaders to the success of cervical cancer screening, made a point of maintaining good relations with them, and expressed their appreciation. A midwife in Kotabaru explained: *I gave them small things sometimes, and compliments so that they know their work is appreciated. Also, we treat them as friends, not as subordinates. Without them, this won't work.*

VIA screening was also promoted on television and radio. Providers reported that a series of television spots on cervical cancer enhanced the risk perceptions of clients, husbands, and the community and prompted women to seek more information.

#### *Barriers to screening*

Many women are not aware of cervical cancer and hence see no need for screening. The lack of symptoms in the precancer phase of the disease also reduces the sense of urgency: in people's minds, no symptoms means no disease, so there is no need to seek out health services. Even when women are aware of the risks of cervical cancer, fear of the disease and a sense of fatalism may discourage them from being screened. A midwife in Tempuran explained women's reasoning: *They think cancer is a deadly disease. Even when you know you have it, there's nothing you can do: you have no money for the treatment. So, why bother?*

Some women are also reluctant to go for screening because they are afraid of the procedure or feel shy about

exposing themselves to providers.

Providers reported a lack of support from the community advocacy teams established by the CECAP Project to help raise awareness and mobilize women to go for screening. During the FGDs, advocacy team members described how weak leadership, a lack of communication and coordination, and confusion over roles and responsibilities limited their effectiveness.

#### *Factors promoting treatment*

Understandably, the primary reason that VIA-positive women seek treatment, even if it requires multiple trips to the health center, is because they want to prevent serious illness. A woman in Klari made her motivation very clear: *I really want to get cured, ma'am, no matter what. It's better [to treat it] now than when it has already grown as a cancer.*

Providers' ability to communicate that message—within a trusting relationship with clients—is one of the main characteristics that distinguishes high-performing health centers. For example, when educating women about cervical cancer screening, a midwife in Kotabaru stressed the importance of telling women that the providers were there to help them and that treatment could prevent cancer.

Support from significant others influences women's decisions. Women reported that friends, relatives, and husbands played a central role in prompting them to get cryotherapy, along with the encouragement of kaders and providers. A VIA-positive woman in Pedes credited her siblings and parents with encouraging her to go for cryotherapy: *I didn't want to go ... But then my mom, father, my oldest siblings, they all pushed me: "Go for it, just try ... what makes it so hard to lay down on your back and get examined? This is for your own health." It lifted up my spirit.*

Although most women went to the health center for cryotherapy by themselves or with friends, some came with their husbands. In fact, providers at two health centers required husbands to accompany their wives for treatment. Having their husband's active support and understanding made it much easier for women to seek treatment.

Role models have a powerful impact on women's decisions regarding treatment. Thus, when a kader was reluctant to be treated herself, local women also hesitated. Providers in Kotaburu recruited a kader who was VIA-positive to speak about her experience with cryotherapy at mobile outreach events. She described her role as follows: *I am happy because ... I have some knowledge that I can share with people, I can encourage people not to be afraid, this is not a cancer, this is even better because we can find out if we have it at an early stage... That's how I explain to them... I can explain because I have experienced it.*

#### *Barriers to prompt treatment*

Most women are not offered SVA because they are

screened at mobile outreach events. This means they have to make a special trip to a health center for cryotherapy. This can pose a scheduling problem, especially for factory workers, because health centers may only offer cryotherapy one day a week. A midwife in Klari described how challenging it is for overstretched health centers to find time and space for cryotherapy: *...the health center only has two examination rooms here. One room is shared for several services. If the room is used for cryotherapy that day, we can only serve cryotherapy. If it is scheduled for pregnancy check-up, or ultrasound, we can only serve ultrasound.*

Women may face additional logistical obstacles to cryotherapy after they arrive at the health center. Providers noted that doctors are not always available to perform the procedure due to scheduling conflicts and competing clinical and administrative responsibilities; instruments may be broken; and CO<sub>2</sub> tanks are sometimes empty. According to providers, repairs can take a month or longer, while refilling the tank can take a week. A midwife described one woman's frustrating experience at the health center in Klari: *There's one patient who was unlucky. The first time she came for cryotherapy, I was not available. The second time, we were running out of gas. The third time, we couldn't find [part of] the instrument...*

To expand the pool of providers who were qualified to perform cryotherapy, midwives at some health centers were trained on the procedure during the final year of the CECAP Project (Before then, policy limited the performance of cryotherapy to doctors). According to officials and some providers, training midwives to perform cryotherapy did help reduce treatment delays. However, interviews revealed certain challenges to implementing the approach. Once trained, midwives did not have sufficient opportunity to practice and sharpen their skills, in part, because of the limited caseload and, in part, because of the reluctance of some doctors to let midwives perform cryotherapy if they were available instead.

Gender norms in Karawang create still another barrier to cryotherapy, particularly to SVA. Women, men, and providers are all in agreement that a woman needs her husband's consent for cryotherapy. According to Islamic values, the husband is the imam or head of the family and a woman must respect and obey him. Thus, providers acknowledged that *"all women who are VIA-positive have a basic reproductive right to treatment of cervical and breast cancer"—but "only with their husbands' consent."* Since men typically do not accompany their wives to VIA screening, it is impossible to get their permission for same-day treatment. Women need time to inform their husbands and get their consent before they can return for cryotherapy.

While some husbands agreed to cryotherapy without asking for further information (*"anything, as long as she's healthy"*), many women found it difficult to get their husband's permission for treatment, particularly because

of restrictions on sexual intercourse after cryotherapy. A woman in Pedes described how her husband reacted to her positive VIA test: *He said, "No. No, you are not allowed [to get cryotherapy]. You are perfectly healthy." I said, "Who said I am healthy? I am the one who feels it, dear. I feel I am unhealthy. Do you want me to have cervical cancer? The midwife said if I don't get cryo in five years I will have cervical cancer." I am so scared, ma'am, scared of getting cervical cancer. What will I do? So I said, "If I die, you might be happy because you can get married again," remembering the requirement for not having sex for 40 days. After begging him the whole night, he finally let me get cryotherapy.*

Men's lack of knowledge regarding cervical cancer, VIA screening, and cryotherapy (including post-treatment instructions) makes it more difficult for women to get permission for treatment. While some women were capable of conveying the importance of cryotherapy to their husbands, others lacked the understanding and the communication skills needed to explain the situation. Some men also wanted more detailed information than their wives could provide, because they felt responsible in case of side effects or malpractice.

Most providers thought the best approach was to ask husbands to accompany their wives for cryotherapy; at that point, they explained the need for treatment and requested the husband's permission to proceed. After some bad experiences (for example, being scolded by men for treating their wives with cryotherapy), providers at a few health centers have begun asking women to bring their husbands for counseling prior to screening in order to gain the husband's consent earlier in the process. A doctor in Kotabaru said: *I am serious in asking them to come with their husbands. There's a form to be signed by husbands. I also give information to the husband [about VIA and cervical cancer]. If the husband doesn't come and he doesn't understand, it will be a problem for us, also. He will complain. I had that experience.*

An official in Karawang Barat said he encouraged village heads and religious leaders to talk with local men about cervical cancer, but initial efforts did not spur much interest among men.

Finally, some women avoid treatment because they are scared or do not want a male doctor examining them. While most women did not find VIA screening to be difficult or painful, those who had a negative experience during screening were especially fearful and reluctant to return for cryotherapy.

## Discussion

The results of this study suggest three strategies that can expand VIA screening coverage in Indonesia and ensure prompt treatment for all who need it: Strengthening community mobilization and advocacy activities; modifying the service delivery model to encourage SVA; and gaining men's support for screening and treatment.

The most important barriers to VIA screening revolve around women's knowledge and perceptions. Because women are not aware of the risks posed by cervical cancer, they feel no need to be screened in the absence of symptoms. They also do not realize that cervical cancer can be treated in its early stages and they may surrender to a sense of fatalism. Similar attitudes and beliefs are common obstacles to screening and treatments in other countries (Bingham et al., 2003). Kaders, community advocacy teams, and television advertising were able to raise awareness, increase knowledge, and prompt many women to go for VIA screening. This suggests that intensifying community mobilization and advocacy activities could expand screening coverage. To address fear and fatalism, one key message could be that VIA screening offers "peace of mind," which women in Latin America have identified as a major benefit of screening (Agurto et al., 2004).

Studies in a variety of settings, including El Salvador, Thailand, and Zambia, suggest that face-to-face interactions with community health workers or peer educators—either individually or in groups—are the most effective way to raise awareness and motivate women to go for cervical cancer screening (Agurto et al., 2003; Bingham et al., 2003; Agurto et al., 2005; Mwanahamuntu et al., 2009). Findings from Indonesia confirm this observation: kaders were able to overcome barriers to screening, and midwives relied on them to boost attendance at mobile outreach events. However, kaders are responsible for promoting a myriad of health services, which limits their commitment to CECAP activities. A systematic effort is needed to take advantage of kaders' position in the community, for example, by formally recognizing their contributions to cervical cancer prevention, regularly updating their knowledge and counseling skills, asking them to follow up women who screen positive, and having providers forge close partnerships with them.

Experience in other settings also suggests the importance of forging partnerships with community groups and institutions. In Peru, for example, more frequent advisory group meetings were an independent positive predictor of screening coverage (Agurto et al., 2005). Community advocacy teams in Karawang were better organized in some sites than others, but generally their advocacy efforts were not as effective as hoped. Without strong leadership or a coherent strategy, the diverse membership of these teams became a liability. Strengthening the community advocacy teams will require a more careful choice of leadership, setting clear goals so that members understand what needs to be done, and increasing communication and coordination within and between teams.

The interviews show that service delivery issues do not pose an obstacle to VIA screening. This stands in contrast to research in other developing countries, where poor access to cervical cancer prevention services, high costs, and negative perceptions of the quality of care

are important barriers to screening (Wellensieck et al., 2002; Bingham et al., 2003; Agurto et al., 2004; Ansink, 2007; Winkler et al., 2008; Mupepi et al., 2011). In fact, the combination of free services and convenient mobile outreach was a major factor facilitating VIA screening in Karawang District, just as it was during a trial in Maharashtra, India (Nene et al., 2007).

However, the current service delivery model does pose an obstacle to cryotherapy in Karawang. Because cryotherapy was not offered at mobile outreach events, most VIA-positive women had to make a special trip to seek treatment at a health center, where limited hours, lack of trained providers, supply shortages, and broken equipment all restricted access to cryotherapy. These findings indicate that changes in the service delivery model—notably offering cryotherapy at or immediately following mobile outreach events—could expand SVA and increase access to cryotherapy.

A demonstration project in Thailand demonstrated the feasibility of transporting cryotherapy units and tanks for mobile services (Gaffikin et al., 2003), but Indonesian providers believe that portable CO<sub>2</sub> tanks are inefficient because they are too small to do more than a few procedures. Providers also expressed concern about the potential for breakage while transporting cryotherapy equipment, although experience in Ghana shows that a combination of advanced training and a manual on repair and maintenance can keep cryotherapy equipment working in the field (Blumenthal et al., 2007). An alternative service delivery model used in the Philippines might offer a better model for the CECAP Project: full-size CO<sub>2</sub> tanks are permanently stationed at local churches, schools, and health units so that mobile teams can escort VIA-positive women to a nearby site for cryotherapy immediately following outreach screening events (Lu E, 2012, personal communication). Regardless of the approach used, expanding the number of sites offering cryotherapy will require additional equipment and supplies.

Shifting responsibility for performing cryotherapy from doctors to midwives has the potential to relieve another obstacle to SVA, that is, the limited availability of providers trained in the procedure. With careful training, nurses and midwives in Bangladesh, Ghana, India, Thailand, and South Africa have proven capable of providing cryotherapy safely and effectively (Gaffikin et al., 2003; Denny et al., 2005; Blumenthal et al., 2007; Sankaranarayanan, Rajkumar et al., 2007; Ahmed et al., 2008; Nene et al., 2008; Sanghvi et al., 2008). These mid-level providers have also been acceptable to—and sometimes even preferred by—women receiving cryotherapy (Bradley et al., 2006). This is likely to be true in Indonesia as well, given women's preference for female providers for most procedures, particularly more intimate ones, such as VIA screening and cryotherapy.

However, initial attempts at task shifting in Karawang District were not entirely successful. After training, midwives need to perform cryotherapy often enough

to sustain their new skills and gain confidence in their abilities. They also need ongoing support and supervision (Blumenthal et al., 2005; Mwanahamuntu et al., 2009). Neither of these conditions were met in Karawang. To get sufficient practice, midwives may need to join mobile service teams or perform cryotherapy at neighboring health centers. Offering midwives sufficient support and supervision will require a change in doctors' attitudes as well as improved communication and teamwork at health centers. A regulatory mechanism is also needed to address providers' concerns about protection from allegations of malpractice.

Social support emerged as an important theme in the interviews. Women cited the encouragement of husbands, family, friends, and neighbors, as well as role modeling by kaders, as key factors facilitating their decisions to go for screening and treatment. At the same time, the lack of support or outright opposition of husbands emerged as one of the greatest barriers to cryotherapy. Men's support has been reported as a key factor in increasing screening coverage and treatment rates in other countries, such as Peru and South Africa (Bingham et al., 2003; Agurto et al., 2005; Winkler et al., 2008). However, it is especially important in Indonesia, where cultural norms and legal requirements require women to consult and get permission from their husbands for cryotherapy.

The findings suggest that gaining men's support for screening and treatment must be a priority. However, the period of sexual abstinence required after cryotherapy can create tension or even provoke physical violence within couples (Bradley et al., 2006). In Indonesia, it is also grounds for husbands to sue providers if they perform cryotherapy without their consent. Women in Karawang say the requirement for sexual abstinence makes it harder to get men's cooperation. Other studies confirm that maintaining abstinence after cryotherapy can be difficult: up to 31% of women have reported having sexual intercourse sooner than instructed (Jacob et al., 2005).

Better counseling and coaching by providers, supplemented with take-home information materials, could help VIA-positive women negotiate with their husbands about cryotherapy. Three weaknesses surfaced during the interviews. Providers need to frame the issue of abstinence properly, stressing that it promotes healing and prevents complications. They need to give correct instructions regarding the duration of abstinence and condom use. And they need to teach VIA-positive women communication and negotiation skills so they can persuade their husbands to consent to cryotherapy and refrain from sex afterwards.

Experience elsewhere suggests that it is more effective to gain men's support earlier in the process, before women are screened, by directing information, education, and advocacy to men as well as women and by including male partners in counseling prior to screening (Bingham et al., 2003). Reaching out to men prior to screening and getting their consent to treatment

in advance would also remove a major obstacle to SVA. If women and men understood that treatment is offered during the same visit as screening, husbands would be more likely to accompany their wives for screening or to sign a form ahead of time that would permit cryotherapy, if needed.

The CECAP Project can learn from experiences in India and South Africa, where male health workers and peer educators were trained to go out into the community to discuss cervical cancer prevention with men. They encouraged men to support women in getting screened and to comply with post-treatment instructions (Agurto et al., 2005; Nene et al., 2007). In India, community leaders also spoke with men about the importance of screening, including at evening health education meetings for both men and women (Nene et al., 2007). While one health center in Karawang asked women to bring their husbands to the group information session at the beginning of the mobile outreach event, it can be difficult for men to take time away from work to attend these morning events. Scheduling a group meeting for a time when men can attend or integrating discussions of cervical cancer prevention into existing services, such as family planning counseling, may be a better approach.

In the long term, advocates should explore the possibility of eliminating the requirement for husband's consent. Most countries do not require the husband's permission for cryotherapy, and there has been some debate about dropping the husband's signature from the consent form in Indonesia as well. Yet providers, as well as broader public opinion, remain in favor of seeking the husband's permission, even if it is not in writing. Thus, changing the policy on husband's consent will require sustained advocacy to garner broad support from both women and men, as well as community leaders, service providers, and policy makers.

Indonesia's Ministry of Health is replicating the CECAP model nationwide, with the financial and political support of district governments. As a result of these efforts, over 291,000 women in 68 districts across Indonesia received VIA screening from 2007 to 2010, but only 39% of VIA-positive women received cryotherapy. By exploring the expressed needs and interests of clients and providers in Karawang District, the qualitative research reported here has identified gaps in the CECAP model and new strategies that can heighten its effectiveness. The national scale-up of cervical cancer prevention services in Indonesia can increase screening coverage and ensure that women get the treatment they need by focusing more energy on community mobilization, modifying the service delivery model to accommodate SVA, and working to gain men's support.

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